

PATENT COOPERATION TREATY

PCT Rec'd PCT/PTO 17 DEC 2004

INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

10/518427

| | |
|-------------|-----|
| RECEIVED | |
| 01 SEP 2004 | |
| WIPO | PCT |

| | | | |
|---|--|--|---|
| Applicant's or agent's file reference P014447WO | FOR FURTHER ACTION | | See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |
| International application No. PCT/GB 03/02582 | International filing date (day/month/year) 16.06.2003 | Priority date (day/month/year) 20.06.2002 | |
| International Patent Classification (IPC) or both national classification and IPC C07F9/09 | | | |
| Applicant IC VEC LIMITED et al. | | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 7 sheets, including this cover sheet.
 - This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 1 sheets.
3. This report contains indications relating to the following items:
 - I Basis of the opinion
 - II Priority
 - III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV Lack of unity of invention
 - V Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI Certain documents cited
 - VII Certain defects in the international application
 - VIII Certain observations on the international application

| | |
|--|--|
| Date of submission of the demand 18.12.2003 | Date of completion of this report 31.08.2004 |
| Name and mailing address of the International Preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 | Authorized Officer Zellner, A Telephone No. +49 89 2399-8078 |



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB 03/02582

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-98 as originally filed

Claims, Numbers

1-6, 15-56 as originally filed
7-14 received on 19.12.2003 with letter of 17.12.2003

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description, pages:
- the claims, Nos.:
- the drawings, sheets:

5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB 03/02582

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- the entire international application,
 claims Nos.

because:

- the said international application, or the said claims Nos. 47,48,50,54,55 relate to the following subject matter which does not require an international preliminary examination (specify):
see separate sheet
- the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
- the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
- no international search report has been established for the said claims Nos. 1-56

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

- the written form has not been furnished or does not comply with the Standard.
 the computer readable form has not been furnished or does not comply with the Standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

| | | |
|-------------------------------|-------------|----------------------------------|
| Novelty (N) | Yes: Claims | 4,6,9-11,15-20,26,27,30-35,37-56 |
| | No: Claims | 1-3,5,7,8,12-14,21-25,28,29,36 |
| Inventive step (IS) | Yes: Claims | |
| | No: Claims | 1-56 |
| Industrial applicability (IA) | Yes: Claims | 1-46,49,51-53,56 |
| | No: Claims | |

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB 03/02582

The following documents (D) are referred to in this communication; the numbering will be adhered to in the rest of the procedure:

- D1: WO 03 014073 A (GENFIT, FR.) 20 February 2003 (2003-02-20)
- D2: DATABASE CA [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; KURI, JUN ET AL: 'Bleaching composition' retrieved from STN Database accession no. 115:73992 XP002252447 & EP 0 447 553 A (KAO CORP., JAPAN) 25 September 1991 (1991-09-25)
- D3: DATABASE CA [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; BARTNIK, FRIEDHELM ET AL: 'Film-forming, resorbable wound dressing containing oligomeric esters of lactic acid or glycolic acid' retrieved from STN Database accession no. 110:160369 XP002252448 & EP 0 250 994 A (HENKEL K.-G.A.A., FED. REP. GER.) 7 January 1988 (1988-01-07)
- D4: DATABASE CA [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; MOLLEYRES, LOUIS P. ET AL: 'Structural studies on the diglyceride-mediated activation of protein kinase C' retrieved from STN Database accession no. 110:20347 XP002252449 & JOURNAL OF BIOLOGICAL CHEMISTRY (1988), 263(29), 14832-8,
- D5: WO 01 68582 A
- D6: EP-A-0 345 038
- D7: WO 99 58120 A

The present application relates to lipid compounds comprising a non-polar moiety and a polar moiety.

item III

1. For the assessment of the present claims 47, 48, 50, 54 and 55 on the question whether they are industrially applicable, no unified criteria exist in the PCT Contracting States. The patentability can also be dependent upon the formulation of the claims. The EPO, for example, does not recognize as industrially applicable the subject-matter of claims to the use of a compound in medical treatment, but may allow claims to a known compound for first use in medical treatment and the use of such a compound for the manufacture of a medicament for a new medical treatment.
2. The international search report does not extend to all of the claimed subject-matter

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB 03/02582

(see Box 1 and further information sheet PCT/ISA/210). This report thus only relates to part of the claimed subject-matter as well (Y is selected from S, Se, O; Z = CH₂; PHG = PC, PE or glycerol as well as all the examples given in the description).

item V

1. Novelty (Art. 33(2) PCT)

- 1.1. The compound of RN 135261-33-5, disclosed in D2, is considered novelty-destroying for present claims 1-3,5,7,8,12-14,18,21-25,28,29,36).
- 1.2. Document D3 discloses compounds falling within the scope of present claims 1-3,5,7,8,12,13,21-25,28,29,36 (RN 119797-92-1, RN 119797-93-2, RN 119797-94-3, RN 119797-95-4).
- 1.3. Document D4 discloses compounds falling within the scope of present claims 1-3,5,7,8,12,13,21-25,29,36 (RN 117933-45-6, RN 117933-46-7, RN 119747-21-4).
- 1.4. Document D5 discloses compounds and their use for treating or preventing e.g. obesity (abstract). The compounds of general formula (I) of D5 would appear to be falling within the scope of present claim 1, since the group OR₂ of D5 is considered comprised by the definition of a "polar head group" according to present claim 1.
- 1.5. The same applies to D6 (general formula (I), abstract) and D7 (general formula (I), abstract).

2. Inventive step (Art. 33(3) PCT)

The problem to be solved by the present application can be considered to provide alternative compounds (to those known from D5-D7) having different therapeutic effects (p. 5 of the description). It appears that the application documents presently on file do not contain convincing information showing that essentially all of the claimed compounds solve the technical problem. It appears furthermore that the provision of compounds in close structural relationship to those known for the same or related use (D5-D7) can presently not be considered inventive as long as no convincing data show an improved, unexpected effect of essentially all of the claimed compounds. Neither the independent claims nor the dependent claims would appear

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB 03/02582

to contain additional features which could be taken as a basis in order to acknowledge the presence of an inventive step. At the present stage, the requirements of Art. 33(3) PCT are not met.

3. Industrial applicability (Art. 33(4) PCT)

Can be acknowledged for claims 1-46, 49, 51-53, 56.

item VI

Document D1 was published after the priority date of the present application but before its international filing date. Its content would be considered as forming part of the state of the art if the priority of the present application was found to be invalid. Applicant is informed that when entering the european regional phase, the said document will also be considered for deciding on novelty in case priority is validly claimed.

item VII

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D2-D4 and D7 is not mentioned in the description, nor are these documents identified therein.

item VIII

1. Claim 1 is unclear and vague due to the use of terms such as "non-polar moiety", "polar moiety", "polar head group" (Art. 6 PCT).
2. Claim 9 defines the polar head group as "derived from a phospholipid". It is unclear what exactly has to be understood by "derived from" (Art. 6 PCT).
3. Although claim 24 is formulated being dependent on claim 1, it would appear that the claimed subject-matter cannot be considered comprised in the definition according to claim 1. According to claim 24, Y-Z represent the group $[Y^1-CH_2]_n$ wherein Y^1 can be CH_2 . Consequently the group Y-Z can be $[CH_2-CH_2]_n$. This, however, does not

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

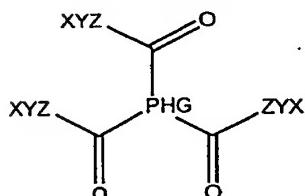
International application No. PCT/GB 03/02582

appear to be possible following the definition according to claim 1 (a group Y, selected from S, Se, SO₂, SO and O must be present). Clarification is requested (Art. 6 PCT).

4. Claim 36 defines "W". The reason why is unclear (Art. 6 PCT).
5. The last paragraph on p. 97 renders the intended scope of protection unclear (Art. 6 PCT).

10/51842?
REPLACED BY
ART 34 AMDT

7. A compound according to claim 5 wherein the compound is of the formula



wherein each X, Y and Z is selected independently of each other.

5

8. A compound according to any one of the preceding claims wherein the polar head group is derived from one of phospholipids, ceramides, triacylglycerols, lysophospholipids, phosphatidylserines, glycerols, alcohols, alkoxy compounds, monoacylglycerols, gangliosides, sphingomyelins, cerebrosides, phosphatidylcholines,

10 phosphatidylethanolamines, phosphatidylinositols (PI), diacylglycerols, Phosphatidic acids, glycerocarbohydrates, polyalcohols and phosphatidylglycerols.

9. A compound according to claim 8 wherein the polar head group is derived from a phospholipid.

15

10. A compound according to claim 9 wherein the phospholipid is a neutral or anionic phospholipid.

11. A compound according to claim 10 wherein the phospholipid is selected from 20 phosphatidylcholine (PC) and phosphatidylethanolamine (PE).

12. A compound according to any one of the preceding claims wherein the polar head group (PHG) is of the formula -W-Linker-HG, wherein W is selected from CH₂, O, NR¹ and S, wherein R¹ is H or a hydrocarbyl group, wherein Linker is an optional linker 25 group, and HG is a head group.

13. A compound according to any one of the preceding claims wherein X is a group selected from optionally substituted alkyl, optionally substituted alkenyl and optionally substituted alkynyl.

30

14. A compound according to any one of the preceding claims wherein X is a group selected from unsubstituted alkyl, unsubstituted alkenyl and unsubstituted alkynyl.